

NO:2 at the time of filing the continuation-in-part application to include the regulatory region. The regulatory region of SEQ ID NO:2 was not disclosed in the parent application. Applicant submits that no new subject matter has been introduced into the present application as a result of these amendments. Page 34, line 2, has been amended to further clarify the corresponding sequence locations. Applicant also submits that the amended Sequence Listing submitted herewith does not add new matter as it does not include subject matter that was not present in the application as originally filed. Furthermore, Applicant submits that the subject matter of the amended computer readable form of the Sequence Listing submitted herewith is the same as that of the amended paper copy of the Sequence Listing.

Claims 3 and 4 have been amended to remove the term "substantially homologous". As a result of the amendment to claims 3 and 4, claims 5 and 6 have been cancelled without prejudice.

Claims 9, 11 and 13 have been amended to remove the dependency on claim 3. Further, claims 9-14 have been amended to recite the amended references the nucleotide sequence of SEQ ID NO:2 as identified above.

Claims 20 and 22 have been amended by replacing the term "host cell" with -- transgenic seed coat cell--. Also claim 20 has been amended to indicate that a gene of interest is

expressed under control of a regulatory region. Claims 24 and 26 have been amended to replace a "transgenic plant" with --transgenic soybean plant--. Claim 27 has been amended to remove reference to SEQ ID NO:2 and further define the DNA molecule to comprise a regulatory region operable in the host and capable of expressing SEQ ID NO:1, as defined on page 13, lines 9-16 of the disclosure.

Claim 28 has been amended to recite a process for producing a heterologous gene of interest in a transgenic soybean plant wherein the gene of interest is under control of a regulatory region and wherein the gene of interest and regulatory region are contained within the vector of claim 16.

New claims 30 and 31 pertain to a vector comprising the DNA of claim 7, and a method of using the vector to express a gene of interest. New claims 32-37 are directed to DNA markers and methods of determining, or selecting between, EpEp and epep plant genotypes. Support for these new claims can be found in Examples 2 and 3, and Figures 4-8. Figure 4 demonstrates restriction length fragment polymorphisms between the two plant genotypes, Figure 5 shows the deletion in the sequence between the two genotypes corresponding to nucleotides 1524 and 1610 of SEQ ID NO:2, and Figures 6-8 which demonstrate PCR analysis of the two genotypes.

Examiner has identified numerous sequences in the disclosure, for example, on pages 25 and 28 and Figures 1 through 5, that have not been included in the Sequence Listing as required by 37 CFR Section 1.821 through 1.825. Applicant has amended the Sequence Listing to include the sequences disclosed on pages 25 and 28 of the disclosure. Further, Applicant notes that Figure 1 of the disclosure is present as SEQ ID NO:1, and that Figure 2 is present in SEQ ID NO:2, beginning at nucleotide 1382. Applicant has amended the Sequence Listing to include nucleotide and amino acid sequence listings of peroxidases described in Figures 3A and 3B. Sequence L78163 refers to peroxidase of the present application and the nucleotide sequence and corresponding amino acid sequence are listed in SEQ ID NO:1. The lower sequence described in Figure 5 (Ep) is defined within SEQ ID NO:2. Applicant submits that the upper sequence disclosed in Figure 5 (ep) comprises a deletion relative to the lower sequence (Ep), and is therefore also disclosed in the sequence defined by SEQ ID NO:2.

Examiner has objected to the title of the invention, alleging that the title is not descriptive. Applicant disagrees with Examiner's objection. The present title is clearly indicative of the invention to which the claims are directed, and is more informative than a similar title including reference

to "SEQ ID NO's:1 and 2" in place of "Peroxidase". The Examiner's allegation that the title includes "peroxidase" and no peroxidase per se is claimed is respectfully traversed, as claim 1 is directed to the nucleotide sequence of SEQ ID NO:1 which defines a peroxidase gene. Reconsideration of this objection is therefore requested.

Rejections under 35 U.S.C. 112

Examiner has rejected to claims 19-29 under 35 U.S.C. 112, first paragraph, alleging that the specification does not reasonably provide enablement for any host cell or transgenic organism or methods of use for expression from the regulatory region 1 through 1532 of SEQ ID NO:2. Applicant traverses the Examiner's rejection.

Specifically, claim 19 is dependent on claim 15, which is in turn dependent on claim 1. Claim 1 includes subject matter of SEQ ID NO:1 and not SEQ ID NO:2 as alleged by Examiner. SEQ ID NO:1 defines the nucleotide sequence of a novel peroxidase gene. As indicated on page 2, line 16 to page 3, line 4, and page 4, lines 12-17, there is a need within the art for the production of peroxidases, such as the expression of the peroxidase gene of the present invention. It is submitted that the expression of peroxidases is well known in the art and one of skill in the art could readily express the peroxidase gene of

the present invention in any host cell. Therefore, Applicant argues that the Examiner's rejection of claim 19 is not well founded in that claim 19 does not relate to expressing a coating segment utilizing regulatory region within bases 1-1532 of SEQ ID NO:2, and that someone of skill in the art could easily practice the subject matter of claim 19 without exercising inventive ingenuity or requiring undue experimentation as proposed by Examiner.

Similarly, claim 21 depends on claims 17 and 3. Claim 3 recites a nucleotide sequence defined by nucleotides 1533-4700 of SEQ ID NO:2 which pertains to the genomic sequence encoding peroxidase. Applicant submits that the subject matter of claim 17 could easily be practiced by someone of skill in the art without exercising inventive ingenuity or undue experimentation.

Claims 20 and 22 ultimately depend from claim 2 and pertain to the regulatory region of the peroxidase gene of the present invention. Applicant submits that the subject matter of these claims is well within the scope of a person with skill in the art, and while not wishing to concede that the subject matter of these claims is not presently enabled, Applicant has amended claims 20 and 22 to indicate that the host cell is a transgenic seed coat cell.

Applicant respectfully traverses Examiner's rejection of claim 23. Specifically, claim 23 is dependent on claims 15 and

1. Claim 1 pertains to the subject matter of SEQ ID NO:1 and not SEQ ID NO:2 as alleged by Examiner. With reference to page 3, lines 10 to 13, which discloses the cloning and expression of peroxidase in transgenic plants, Applicant submits that the subject matter of claim 23 can be readily practiced by one of skill in the art. Thus, Applicant requests that Examiner's rejection of claim 23 be removed. Similarly, claim 25, which ultimately depends on claim 3 (directed to a nucleotide sequence defined by nucleotides 1533-4700 of SEQ ID NO:2, i.e. the genomic sequence encoding peroxidase) pertains to a transgenic plant comprising the peroxidase gene of the present invention. Applicant submits that it is well known in the art to express transgenic genomic sequences in plants. Thus the subject matter of claim 25 could easily be practiced by someone of skill in the art without exercising inventive ingenuity or undue experimentation.

With respect to claim 24 and claim 26, Applicant submits that the subject matter of these claims is well within the scope of a person with skill in the art as the expression of a heterologous promoter within plants is well known. However, while not wishing to concede that the subject matter of these claims is not presently enabled, Applicant has amended claims 24 and 26 to indicate that the transgenic plant is a transgenic soybean plant.

Applicant has amended claim 27 by cancelling the subject matter relating to SEQ ID NO:2. The claim now comprises only the subject matter of SEQ ID NO:1 which codes for peroxidase.

Claim 28 has been amended to indicate that the heterologous gene of interest to be produced in a transgenic soybean plant is under control of a regulatory region and wherein the gene of interest and the regulatory region are contained within the vector of claim 16.

Claim 29 depends on claim 28. Based on the amendments made to claim 28, Applicant submits that as claim 29 is allowable, since claim 29 depends on claim 28 and further defines the heterologous gene of interest to be produced within seed coat cells.

As a result of the above amendments and arguments, Applicant requests that the rejection of claims 19 to 29 under 35 U.S.C. 112, first paragraph, be removed.

Claims 3, 4, 17 and 25 stand rejected under 35 U.S.C. 112, first paragraph, on the basis that the term "substantially homologous to" lacks any specific limitation directed to useful embodiments and that the disclosure does not reasonably provide enablement for any substantially homologous DNA sequences.

Applicant has amended claims 3 and 4 to remove the term "substantially homologous to" and requests that the rejection be removed. In making the amendment to claim 3, Applicant submits

that claims 17 and 25, which depend on claim 3, also stand free of the rejection under 35 U.S.C. 112.

The Examiner has rejected claims 20, 28 and 29 under 35 U.S.C. 112, second paragraph, alleging that the claims are indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant has amended claim 20 to recite a transgenic seed coat cell capable of expressing the gene of interest under control of a regulatory region, wherein the gene of interest and regulatory region are contained in the DNA molecule within the vector of claim 16. Similarly, claim 28 has been amended to further recite the process for producing a heterologous gene of interest and transgenic soybean plant. Claim 29 depends on claim 28 and indicates that the heterologous gene of interest is produced within the seed coat cells. Thus, Applicant argues that the claims are unambiguous and requests that the rejection of these claims be removed.

Rejections under 35 U.S.C. 102

The Examiner rejects claims 3 and 4 under 35 U.S.C. 102 as being anticipated by Huangpu et al. and by the Sigma Chemical Company 1990 catalogue.

Applicant has amended claims 3 and 4 to remove the phrase "substantially homologous to" in claims 3 and 4, and submits

that the claims as now presented are not anticipated by Huangpu et al. or the Sigma Chemical Company 1990 catalogue. The sequence disclosed by Huangpu et al. and the Sigma Chemical Company 1990 catalogue are clearly different from those of claims 3 and 4. Removal of the rejection of claims 3 and 4 under 35 U.S.C. 102 is requested.

Double Patenting Rejections

Examiner has provisionally rejected claim 1 under 35 U.S.C. 101 as claiming the same invention as that of claim 1 of co-pending application Serial No. 08/723,414. The Examiner also provisionally rejects claims 1-29 as representing obviousness type double patenting over claims of Application Serial No. 08/723,414. Upon determination of allowability of the present claims, Applicant will take such action as may be necessary to moot the rejections.

This application is submitted to be in condition for allowance and a Notice to that effect is requested.

Respectfully submitted,

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